



# Product Information

## **FELDER-ISO-Tin<sup>®</sup>, “Sn98Ni+“, “Sn97Ni+“, “Sn96Cu4Ni”**

Lead-free high temperature electronic solder for application in dip and selective soldering machines at temperatures above 350 °C.

Item No.: 5512901026 / 551489.... / 551460.... / 13860120

Lead-free FELDER-ISO- Tin<sup>®</sup> electronic solder alloys do not contain any substances that are subject to restriction by directive 2011/65/EU (“RoHS”).

All information about our products is the result of our long standing experience which we would like to pass on to our customers as application support. However, as we do not have any influence on the application of the works carried out with our products, please see the warranty claims in our conditions of sale because our liability is limited.

This product information does not constitute warranted properties.

## Application

Lead-free solder alloys for the tinning of varnished copper wires in dip and selective soldering machines at high soldering temperatures above 350 °C (e.g. soldering coil bodies or in the transformer production). Although the RoHS still permits the use of soft solder alloys with a lead content > 85%, the market is also demanding lead-free solutions for these applications.

## Properties

The copper leaching during the soldering process is in comparison to standard nickel-free soldering significantly reduced, because of the Ni-contents in our lead-free high-temperature solders. This was documented by extensive tests, explicit. This will also reduce the decrease of the wire-cross-section during soldering, significantly. The solder bath obtained a higher level of time, because of lower copper entry ("pre-saturation" of the solder with copper). Sn97Ni+ and Sn96Cu4Ni are suitable for use in dip and lift dip soldering systems. Copper contents of more than 2.0 % in the solder are not recommended for use in selective soldering systems with mini wave(s), as flocculated copper crystals can cause a blockage of the pump system.

FELDER ISO-Tin®	Alloy	Melting Range	Solder Temperature	FELDER item-no.:
<b>Sn98Ni+</b>	Sn97.9Cu2NiGe	227 - 290 °C	350 - 500 °C	551290.../ 551489....
<b>Sn97Ni+</b>	Sn96.9Cu3NiGe	227 - 310 °C	350 - 500 °C	551460....
<b>Sn96Cu4Ni</b>	Sn95.9Cu4Ni	227 - 335 °C	≥ 500 °C	13860120
Further alloys are deliverable on request.				

## Composition and impurities acc. ISO 9453

Alloy	Sn	Cu	Ni	Ag	Ge
<b>Sn98Ni+</b>	Rest	1.5 – 2.5	0.05 – 0.07	< 0.03	0.01 – 0.015
<b>Sn97Ni+</b>	Rest	2.5 – 3.5	0.05 – 0.07	< 0.03	0.01 – 0.015
<b>Sn96Cu4Ni</b>	Rest	3.5 – 4.5	0.04 – 0.06	< 0.03	-

Alloy	Pb	Sb	Bi	Au	In	Al	As	Cd	Fe	Zn
<b>Sn98Ni+ Sn97Ni+ Sn96Cu4Ni</b>	0.07	0.10	0.10	0.05	0.10	0.001	0.03	0.002	0.02	0.001

## Delivery Forms

Solid wire, Ø1.5 mm and 3.0 mm, spooled on 1.0 kg and 4.0 kg (item-no.: 551489....)  
400 g rods, 330 x 20 x 10 mm (item-no.: 5512901026)  
250 g rods, 400 x 10 x 10 x 10 mm (item-no.: 13860120)

## Advice

Other alloys are included in our standard delivery program.  
Unlimited shelf life under room conditions.